

To investigate the **effect** of different **features of bark** on the **abundance of *Psychotria serpens*** by measuring its **percentage cover** on tree trunks

Group 5

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Material

- Transparent grid quadrat
- Lux meter
- Soft measuring tape
- Wildlife pictorial guide
- Digital thermometer



Procedure

- **Step 1** : A tree with apparent bark features attached by the *Psychotria sepens* was searched
- **Step 2** : The bark features , perimeter of the tree trunk and the abiotic factors(light intensity , temperature) were observed and recorded
- **Step 3**: The grid quadrat was placed on the tree trunk facing the north direction at three different height (0.5m , 1.0m , 1.5m) to measure the percentage cover of *Psychotria serpens*
- **Step 4** : The results were recorded and the average percentage cover was calculated
- **Step 5**: A tree with similar characteristics growing in similar environment was searched



BACKGROUND

- Independent variable: features of the bark
- Dependent variable: abundance of the *Psychotria sepens*
- *Controlled variables: temperature of the surrounding, light intensity of the target's environment and etc*

BACKGROUND

- Family name: Rubiaceae
- Gene: Psychotria
- *Psychotria serpens* is a kind of dicotyledon flowering plant which usually attached to the surface of trees and stones
- It can commonly be found around the woodland in Hong Kong .

- By measuring the percentage cover of the *Psychotria serpens* on the trees, we can know the abundance of different kinds of bunk on the growth of the it.

Results

Tree sample	Tree 1	Tree 2	Tree 3
Air temperature (degree celsius)	28.1	29	29
Light intensity (Lux)	around 1607	around 1375	around 1108
Periphery (cm)	52	50	45
Percentage cover (0m, 0.5m, 1m)	8.436%, 2.881%, 0%	4.603%, 4.311%, 0%	0%, 10.29%, 13.99%
Percentage cover (mean)	3.772%	2.971%	8.094%
Distinctive features of bark	shedding, no rift, soft	no shedding, net-like rift, soft	no shedding, net-like rift, hard
Competitor present	Nil	Little algae	Nil

Results

Tree sample	Tree 3	Tree 4
Air temperature (degree celsius)	28.9	28.9
Light intensity (Lux)	around 3400	around 3400
Periphery (cm)	98	94
Percentage cover (0m, 0.5m, 1m)	0%, 6.173%, 17.08%	3.704%, 21.19%, 10.99%
Percentage cover (mean)	7.751%	11.96%
Distinctive features of bark	mild rift, hard	deep rift, hard
Competitor present	Nil	Nil

Discussion

- Tree 2 VS Tree 3 (soft VS hard)
- Contrasting factor : hardness
- Tree 4 VS Tree 5 (mild rift VS deep rift)
- Contrasting factor : depth of rift

• Contrasting factor : hardness

- Hardness ↑, Abundance ↑
- ∴ Harder bark provides :
- better anchorage for *serpens* to attach
- better protection against other competitors, like parasitic plants
⇒ more space for growth

	Tree 2	Tree 3
Percentage cover (mean)	2.971%	8.094%
Distinctive features of bark	no shedding, net-like rift, soft	no shedding, net-like rift, hard

• Contrasting factor : depth of rift

- Depth of rift ↑, Abundance ↑
- ∴ deeper rift provides:
- more holes for seeds to attach to tree
⇒ higher chance for seed germination
- more pores for trapping water, which is essential for its growth

	Tree 2	Tree 3
Percentage cover (mean)	2.971%	8.094%
Distinctive features of bark	no shedding, net-like rift, soft	no shedding, net-like rift, hard

Errors & Limitations

- varied abiotic factors
- competitors
- species of plants
- not enough time (not representative)
- age of trees

Conclusion

- The harder the tree bark, the more abundant the *Psychotria serpens* attached to the tree is.
- The deeper the rift, the more abundant the *Psychotria serpens* attached to the tree is.